Hi Ryan –

Just a couple of rambling comments/questions (but mostly though stating the obvious)

I have a question - Why you are not interested in the confined channel method? It would seem that this would be the most important because sediment is in the stream channel and this sediment would have the greatest potential impact on water quality. Is it that you are interested in looking at both instream and open slope sediment and that the ODF method gives you the ability to look at both confined channel and open slope sediment transport? Or is it that you already know the effect of the confined channel method, and you are wanting to know how much of the open slope sediment transport could get to a channel and then become 'confined' channel? Sorry if I am asking some questions that have been answered previously (e.g., I have not done my homework).

As you outlined below, it seems that the ODF method provides you with some specific benchmarks to develop a GIS derived potential stream sediment delivery. What part are you interested in evaluating with this analysis: 1) initiation, 2) transport, and/or 3) deposition? It seems that you have information for all of these in the ODF document (e.g., High hazard are slopes >80% (Initiation) or deposition begins with <40% slope for 50 feet (in other words, transport continues with the slope if slope >40%), or "debris torrent typically deposit along channel gradients less than 6 percent", etc).

It seems that you would need to use a really high resolution (e.g., Lidar derived) DEM to pull this off because the variables are really small scale (e.g., channel is not confined if the width of the valley 10 feet above the surface stream is >200, or deposition begins with <40% for 50 feet) – That is, a 10 m DEM would not be able to pick this stuff out. Fortunately, it does exist, but is it practicable to process 2m DEM with our current computing power?

You mentioned that you are going to talk with Dan Miller, you might find out that the NetMap tool would be able to help you out with at least some of the effort (maybe give you some ideas, or some products that you can use in you analysis).

Peter

Attached is the Benda and Cundy paper.

The Benda and Cundy paper and the Miller paper mostly deal with debris flow transport in confined channels as opposed to open slope transport. Since most of the confined channels have a stream in them I'm mostly looking for open slope transport.

The ODF method is one of the few sources that I have been able to find that discusses this aspect. only source The report is here:
http://www.oregon.gov/odf/privateforests/docs/landslidetechnote6.pdf.

ODF's method is not hard and fast but the basic rule is that material will travel down slope until it reaches a slope of less than 40% for at least 50 feet, unless there are obstructions or barriers (eg vegetation),it intersects a confined channel with water, or there is a large junction angle (reducing its energy).

I'm leaning toward using the ODF method or a modified version of it but I suspect Lee Benda and or Dan Miller may have something that they use. I still need to chat with them. Whatever we use I will have to create a script to make it run over a very large area.

I'd love to hear what you think.

Hi Ryan –

I was looking over the handout from you recent presentation on the proposed Shallow Landslide Approach. I wanted to ask you if you could send me links (documents) on two of the potential upslope transport and deposition models you are looking into for this project. I was able to quickly find the Miller and Burnett 2008 document, but I am not able to locate the papers associated with ODF method, and the Benda and Cundy method. Is it possible for you to forward me copies of these documents? Also, which tool do you think you will use? (e.g., pros and cons of each)

Thanks in advance for the help.

Peter Leinenbach

Aquatic and Landscape Ecologist

U.S. Environmental Protection Agency - Region 10

Office of Environmental Assessment